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## PATENT SPECIFICATION

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Wolfgang Spindler, Stuttgart-Weil im Dorf  
was named as the Inventor

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Wolfgang Spindler, Stuttgart-Weil im Dorf

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Means for coloring skin, in particular lips

Patented in the area of the Federal Republic of Germany beginning 10 July 1952

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Patent grant announced on 13 February 1958

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Until now, biological or artificial fats and waxes were used for the production of cosmetic color- and skincare compounds. They had to have an appropriately low melting point to produce a smooth film when applied to the human skin. However, said fats and waxes smear easily in said consistency, and their bonding strength is therefore limited.

The same applies to these fats and waxes in their function as carriers of colorants and pigments. Because of the lack of smear-resistance of the carrier substances, the coloring substances cannot be lastingly set at the same time. However, to render colorants lastingly adhesive anyway, one route often chosen was to set said colorants by a chemical reaction on the human skin itself. This, however, requires moving the pH-value above or below the neutral point. This can create skin irritations which have often led to allergies or other damages.

Finally, the oils, fats and waxes suitable and previously used for these purposes also have the disadvantage that they retain their full effect only within a narrow temperature range. At high heat, they become largely liquid and smear. At severe cold temperatures, they crack and leave the human skin largely unprotected. In accordance with the invention, on the other hand, it has been found that the oily or fatty polymers of the siloxanes do not have the aforementioned disadvantages of the previously used fats or waxes.

As stated in the publication by M. Schoog, printed in the publication "Arzneimittelforschung" [Pharmaceutical Drug Research], 1951, page 167 to 169, silicones can be used as base of salves that are well tolerated by the human skin. It is furthermore known

that polysiloxanes generally generate a hydrophobic and insulating film on practically all surfaces that are coated with these artificial substances in any form, with the strength of this type of film being all but irrelevant.

However, there is a physiologically significant difference between the various structures of the human skin. The different parts of the facial skin, especially the lips, are very sensitive. Chemicals that are readily tolerated by the body skin can cause allergic reactions on the lips, which can be remedied only with clinical treatment.

In cosmetics, the attempts are now to meet the demands for beautification by coloring, for example of the lips, without haven to accept disadvantageous effects of the cosmetic preparations. Beyond the demand for general salve bases, however, these cosmetic preparations must have special properties to be useable in practice. It has now been found that polysiloxanes, due to their chemical indifference, do not cause any of the feared allergic reactions and on the contrary, develop a pronounced protective effect. The reason for said protective effect is in particular that the polysiloxane molecule has two different radicals, i.e., a terminal on which is strongly hydrophobic and a hydrophilic one. When the polysiloxanes are applied to human lips, for example, the hydrophilic groups are attracted to the skin of the lips, but do not remove any moisture from the skin of the lips because unlike the previously used triethanolamine, they do not have a hygroscopic effect. The hydrophobic ends of the molecules face outward and on the one hand, prevent a wetting of the lips by saliva, which in particular during the cold season or under a strong effect

of the sun causes the lips to crack. On the other hand, said position of the molecule largely prevents the lips from drying out by giving off water vapor, which applies to essential parts of the facial skin in general, and thus the tissue retains its natural moisture content under said silicon protection and thus retains a good appearance. In addition to these particularly good and new effects of the polysiloxanes, for which there is a chemical explanation, it has also been found that the favorable mechanical or physical properties of the polysiloxanes can also be used technologically in the production of cosmetic preparations. Thus, in summary, it is described in the following which advantages can be achieved by integrating these artificial substances in cosmetic colorant substances relative to the previous means:

a) The viscosity of polysiloxanes practically does not change in the temperature range of cosmetic application; b) they have a strongly impregnating and water-repellant effect and protect color films from smearing caused by liquids and also partially against abrasion; c) they act very preserving to the human skin, protect the skin from drying, brittleness, the formation of cracks, and they are completely safe, i.e., they do not generate any type of irritation; d) as a protective film in or over colorants, they generate a brilliant gloss and let color hues appear brighter.

#### Example I

0.5 grams eosine are worked into 10 grams of an aqueous dispersion of a diethylpolysiloxane of oily quality until the colorant has dissolved completely.

When applied on the lips, this emulsion generates a smear-proof and glossy red coat after the water has evaporated.

#### Example II

10 grams wax alcohol, 10 grams cocoa butter, 1 gram water, 3 grams of a pasty diarylpolsiloxane, 0.8 grams easine, 2 grams of a commercial pigment colorant and 0.1 grams of a wetting agent, such as the monethylether of the ethylene glycol, are heated in a vessel until all of the substances are present in liquid form. This melt is then mixed well and poured into molds. After cooling, the result is a consistent compound of the type of normal, commercial lipsticks.

#### PATENT CLAIM:

Means for coloring the skin, in particular the lips, characterized by a content of polysiloxanes.

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Printed matters taken into consideration:

M. Schoog, "Die Bedeutung der Silikone für die Dermatologie" [The significance of silicones for dermatology], printed in the publication *Arzneimittel-forschung* [Pharmaceutical Drug Research], 1951, page 167 to 169; "Chemical Abstracts of the American Chemical Society", 45 (1951), page 10487;

"Einführung in die Chemie der Silikone" [Introduction into the Chemistry of Silicones] by Eugene Rochow, 1952 (Day of Publication: 29 January 1952), page 136 and 137.